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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,728	04/02/2004	Takayuki Ishiguro	KY-198	9473

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MATTINGLY, STANGER & MALUR, P.C.
Suite 370
1800 Diagonal Road
Alexandria, VA 22314

EXAMINER

PHAM, HOA Q

ART UNIT	PAPER NUMBER
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2886

MAIL DATE	DELIVERY MODE
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08/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/815,728

Applicant(s)

ISHIGURO, TAKAYUKI

Examiner

Hoa Q. Pham

Art Unit

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/29/07 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-3, 10-11, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagen et al (US 2002/0154298 A1) in view of Smilanski et al (US 6,810,139).

Regarding claims 2, 10 and 16, Hagen discloses an optical system for detecting defect a edge portion of a rotated disk (12) which is translucent or transparent, comprising: an illumination system (10) for illuminating light beam (11) to inspected region (14) of said edge portion said rotatable disk (12) through an inside portion of said disk by directing the light beam (11) at a predetermined incident angle with respect to a

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peripheral surface of said disk to be inspected; and a first light receiving system (22) provided externally of said disk in a vicinity of said inspected region, receiving diffused light (noted that diffused light is scattered light with uniform density) from said inspected region (see paragraphs [0019-0020] and figure 1). Hagen et al does not explicitly teach the use of an optical fiber for receiving scattered light from test disk to the CCD detector; however, such a feature is known in the art as taught by Smilanski et al. Smilanski et al, from the same field of endeavor, teaches the use of optical fibers for transmitting scattered light from the wafer to the CCD detector (column 14, lines 16-34; column 20, lines 36-53 and figures 4 and 6a). It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose in front of the CCD camera of Hagen et al an optical fiber taught by Smilanski et al for the purpose of transmitting scattered light to the detector. The rationale for this modification would have arisen from the fact that using such optical fiber would prevent light lost from the inspection system, thus increase the signal to noise ratio.

Regarding claims 3, 10-11 and 17-18, see "abstract" of Hagen et al for glass disk and figure 1 for the light beam (11), which made a spot on an outer peripheral surface.

4. Claims 4-8, 12-15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagen et al and Smilanski et al further in view of Brunfeld et al (6,294,793).

Regarding claims 4, 12 and 19; Hagen et al does not explicitly teach the use of an additional second light receiving system; however, such a feature is known in the art

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as taught by Brunfeld et al. Brunfeld et al, from the same field of endeavor, teaches the use of a plurality of light receiving systems of detecting the defects at the edge of and/or within the glass disk (figure 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include in Hagen et al an additional light receiving system if additional inspection is desired.

Regarding claims 5-6, 13-14, and 20, Hagen et al does not teach or suggest that the light source is a laser; however, such a feature is known in the art as taught by Smilanski et al. Smilanski et al, from the same field of endeavor, teaches the use of a laser source (see abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the light source of Hagen et al by a laser source because they both use of detecting defects of a workpiece.

Regarding claims 7-8 and 15, as mentioned above, Hagen et al does not explicitly teach the use of an optical fiber for receiving light from test disk to the detector; however, It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose in front of the CCD camera of Hagen et al an optical fiber taught by Smilanski et al for the purpose of transmitting scattered light to the detector. The rationale for this modification would have arisen from the fact that using such optical fiber would prevent light lost from the inspection system, thus increase the signal to noise ratio.

Response to Arguments

5. Applicant's arguments filed 5/29/07 have been fully considered but they are not persuasive.

a. Applicant argues that Hagen et al does not teach light receiving system for receiving scattered light. The argument is not deemed to be persuasive because Hagen et al teaches that the reflecting light rays strike an anomaly, such as a crack or chip, in an edge surface of the disk; the light ray is diffused (paragraph [0019]). Applicant is noted that diffused light is scattered light with highly density; also, by the definition "diffuse" is "to scatter" or "spread about" (see WEBSTER'S II, New Riverside University Dictionary). It is believed that the rejections above are proper. Applicant also does not discuss if any different between the "scattered light" and "diffused light".

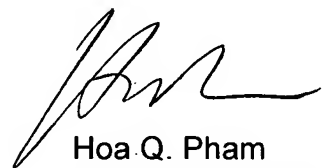
b. Applicant's remarks, page 10, argues that the references do not teach that the optical fiber is disclosed in front of a CCD detector (camera). It is agreed that Hagen et al disclose the use of a CCD detector (camera) (22) and does not disclose an optical fiber in front. However, this feature is well known in the art taught by Smilanski et al as mentioned above. Since both devices of Hagen et al and Smilanski et al are used for inspecting defects of an object, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in front of the camera of Hagen et al an optical fiber which receiving scattered light.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Metzger (3,430,055) discloses a surface flaw detector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on Monday through Friday, 8:00AM TO 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hoa Q. Pham
Primary Examiner
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